

In re Application of:
Short
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PATENT
Attorney Docket No.: DIVER1280-10

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

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1/22/04
1. (Currently Amended) A method for identifying bioactivities or biomolecules using high throughput screening of nucleic acid comprising:
 - a) generating an environmental gene library containing a plurality of clones in E.coli, wherein the nucleic acid for generating the library is naturally occurring and obtained from a mixed population of uncultured organisms;
 - b) transferring a plurality of the clones to [[a]] myceliate bacteria or myceliate fungi;
 - c) encapsulating a bioactive substrate and at least one clone transferred in b) in a gel microdroplet, wherein a bioactivity or biomolecule produced by the clone is detectable by a change in fluorescence of the substrate prior to contacting with the at least one clone as compared to after the contacting; and
 - d) screening the microdroplet with an assay or an analyzer that detects the presence therein of the change in fluorescence of the substrate, wherein the change indicates the identity of the bioactivity or biomolecule.
 2. (Previously Amended) The method of claim 1, wherein the bioactivity is provided by an enzyme that is selected from the group consisting of lipases, esterases, proteases, glycosidases, glycosyl transferases, phosphatases, kinases, mono- and dioxygenases, haloperoxidases, lignin peroxidases, diarylpropane peroxidases, epoxide hydrolases, nitrile hydratases, nitrilases, transaminases, amidases, and acylases.

Claims 3-6 (Cancelled)